REMARKS

The Office Action mailed December 15, 2005 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1, 3-19, and 21-37 are now pending in this application. Claims 2 and 20 have been cancelled. No new claims have been added. Claims 9, 10, 26, and 28 have been redrafted as independent claims.

The rejection of Claims 28 and 29 under 35 U.S.C. §112, second paragraph, is respectfully traversed.

Claim 28 was rejected for reciting the phrase "the intermediate image" in line 3. This phrase has been change to "an intermediate image". Claim 28 was also rejected for reciting "the generated set" in line 4. It is submitted that this term would be understood by one of ordinary skill in the art as referring to the set generated in the step recited immediately above this line. However, the phrase "of image correction values" has been appended to the phrase "the generated set", and it is submitted that there is adequate antecedent basis for this combination of phrases, taken as a whole, in the step recited immediately above the recitation of the combined phrases. For these reasons, it is submitted that the 35 U.S.C. §112, second paragraph rejection of Claim 28, as herein amended, no longer applies.

Claim 29 was apparently rejected because of its dependency upon Claim 28. When the recitations of Claim 29 are considered in combination with the recitations of Claim 28, as herein amended, it is submitted that the 35 U.S.C. §112, second paragraph rejection of Claim 29 also no longer applies.

For the above reasons, it is requested that the 35 U.S.C. §112, second paragraph rejection of Claims 28 and 29 be withdrawn.

The rejection of Claims 1-3, 6, 7, 19-21, 24, 30, 32, and 33 under 35 U.S.C. §102(b) as being anticipated by Rasche et al. (U.S. 5,933,006) is respectfully traversed.

The Office asserted that Rasche et al. shows all of the features of the instant invention as required by independent Claims 1, 19, and 33, including a computer, method, and imaging system for reducing motion artifacts in sequentially scanned images using velocity vectors of pixels or edges. The Office appears to assert that this detection must inherently be done by edge recognition, but it is submitted that no edge recognition is described by Rasche et al., and a completely different method is described by Rasche et al. for detecting motion.

More particularly, Rasche et al. does not use edge detection to detect motion. Instead, a pixel b_1 of an image object B is situated at a raster point $r_{31}(I_1)$ of a raster R_1 in a reference image I_{ref}. The position of pixel b_1 in images I_2 and I_3 changes as is illustrated in Figure 5 of Rasche et al. See also col. 6, lines 59-63. The location of a selected pixel is determined in the MR images by determining the intensity (the image value) associated with the pixel in the reference image and then determining the position of the pixel on the basis of its image value in the other MR images. See col. 6, line 66 to col. 7, line 7. Rasche et al. thus describe a method that is based on image values or intensities of individual pixels rather than contrast values, as would be the case if an edge detection program were used. Moreover, contrary to the Office's assertion that the use of edges is disclosed, the operation described by Rasche et al. is performed for all pixels situated at raster points of the raster R_1 in the reference image I_{ref} wherefrom all image transformation parameters T_{12} and T_{23} are derived. The use of all pixels is not what one would expect if an edge detection program were used. Thus, not only is edge detection not inherent in the method of Rasche et al., it is neither used nor even suggested.

By contrast, Claim 1 has been amended to incorporate the use of the edge recognition program formerly recited in Claim 2. Because this feature is neither inherent in the method disclosed by Rasche et al. nor fairly suggested by Rasche et al., it is submitted that Claim 1, as herein amended, is patentable over Rasche et al. Claims 19 and 33 have been similarly amended to recite an edge recognition feature, and it is submitted that independent Claims 19 and 30 are therefore also patentable over Rasche et al. for reasons similar to those given with respect to Claim 1. (The Office asserted that Claim 33 was an independent base claim, but it is dependent upon Claim 30.)

This rejection no longer applies to Claims 2 or 20, which have been cancelled.

Claims 3, 6, and 7 depend directly upon Claim 1. When the recitations of Claims 3, 6, and 7 are considered in combination with the recitations of Claim 1, it is submitted that Claims 3, 6, and 7 are likewise patentable over Rasche et al.

Claims 21 and 24 depend directly upon Claim 19. When the recitations of Claims 21 and 24 are considered in combination with the recitations of Claim 19, it is submitted that Claims 21 and 24 are likewise patentable over Rasche et al.

Claims 32 and 33 depend directly or indirectly upon Claim 30. When the recitations of Claims 32 and 33 are considered in combination with the recitations of Claim 30, it is submitted that Claims 32 and 33 are likewise patentable over Rasche et al.

For the above reasons, it is requested that the rejection of Claims 1-3, 6, 7, 19-21, 24, 30, 32, and 33 under 35 U.S.C. §102(b) as being anticipated by Rasche et al. be withdrawn.

The rejection of Claim 31 under 35 U.S.C. § 103(a) as being unpatentable over Rasche et al. is respectfully traversed.

The Office asserted that Rasche shows all of the features of the present invention except for the use of x-rays produced from an electron beam and target, but that it would have been obvious for one of ordinary skill in the art to use CT imaging instead of MR imaging.

Even assuming, *arguendo*, that the above assertion is true, Rasche et al. still does not teach or suggest comparing at least two sequential images with an edge detection program to determine motion. Instead, as described above, Rasche et al. uses a method that appears to be based on the values of each and every pixel to determine movement of all pixels between images and does not use an edge detection program.

Claim 30, as herein amended, and as described above, recites a computer configured to "compare said at least two sequential images with an edge detection program to determine motion...". This feature is neither shown nor fairly suggested by Rasche et al., and, as indicated above, Claim 30 is thus patentable over Rasche et al. for at least this reason.

Claim 31 depends directly from Claim 30. When the recitations of Claim 31 are considered in combination with the recitations of Claim 30, it is submitted that Claim 31 is likewise patentable over Rasche et al.

For the above reasons, it is requested that the rejection of Claims 1-23 under 35 U.S.C. §103(a) over Rasche et al. be withdrawn.

Applicant gratefully acknowledges the allowance of Claims 14-18 and 34-37.

Claims 4, 5, 8-13, 22, 23, and 25-27 were indicated as containing allowable subject matter, but were objected to as being dependent upon a rejected base claim.

It is submitted that, in view of the amendment to independent base Claim 1, Claim 1 is not in condition for allowance. Claims 4, 5, and 8 are indirectly dependent upon independent base Claim 1, and should therefore now also be in condition for allowance.

Claims 9 and 10 have been rewritten in independent form as suggested by the Office, and thus should now be allowable.

Claims 11, 12, and 13 depend directly or indirectly upon newly independent base Claim 10, and therefore should now be allowable.

Claims 22, 23, and 25 depend indirectly upon Claim 19 as herein amended. As described above, Claim 19 as herein amended is patentable over Rasche et al. Therefore, it is submitted that Claims 22, 23, and 25 should therefore now be allowable.

Claim 26 has been rewritten in independent form as suggested by the Office, and therefore should now be allowable.

Claim 27 depends directly upon newly independent base Claim 26, and should therefore now be allowable.

For the above reasons, it is requested that the objection to Claims 4, 5, 8-13, 22, 23, and 25-27 as being dependent upon a rejected base claim be withdrawn.

Claims 28 and 29 were rejected under 35 U.S.C. §112, second paragraph, but were indicated as being allowable if rewritten in independent form and if the rejection under section 112 were overcome.
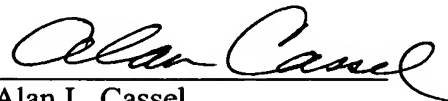
As indicated above, Claim 28 has been amended to overcome the rejection under section 112. Claim 28 has also been rewritten in independent form, as suggested by the Office. For these reasons, it is submitted that Claim 28 is now in condition for allowance.

Claim 29 appears to have been rejected under section 112 solely because of its dependency upon Claim 28. Thus, the amendments to Claim 28 also overcome this rejection of Claim 29. Moreover, Claim 29 depends directly from Claim 28. Because Claim 28 is now allowable, it is submitted that Claim 29 is now in allowable form.

For these reasons, it is requested that both the objection and rejection of Claims 28 and 29 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

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